

In re: Appln No. 09/707,685  
Amendment dated February 6, 2005  
Reply to Office action of August 5, 2004

Atty Docket: 6006-015

This listing of claims replaces all prior versions and listings of claims in the application:

**Listing of Claims:**

**Claim 39. (Currently Amended).** A method of manufacturing an endoluminal stent capable of radially expanding from a first diameter to a second diameter, and having a plurality of first structural elements defining a longitudinal axis of the stent and a plurality of second structural elements interconnecting adjacent pairs of first structural elements and defining a circumferential axis of the stent, comprising the steps of:

- a. vacuum depositing a stent-forming metal onto an unpatterned, exterior surface of a generally cylindrical substrate [at a deposition rate that controls a] under process conditions that controls at least one of [formation of heterogeneities to form] grain size and formation of chemical and intra- and intergranular precipitates in the bulk material of a deposited [a] generally tubular, unpatterned[, substantially homogeneous] metal film;
- b. defining the plurality of first and second structural elements of the endoluminal stent in the unpatterned metal film; and
- c. removing the endoluminal stent from the generally cylindrical substrate.

**Claim 40. (Previously presented)** The method according to Claim 39, further comprising a step of depositing a sacrificial material layer onto the substrate prior to step (a) and removing the sacrificial material layer in order to remove the endoluminal stent from the substrate in step (c).

**Claim 41. (Previously presented)** The method according to Claim 39, wherein step (a) is conducted by ion beam-assisted evaporative deposition.

**Claim 42. (Previously presented)** The method according to Claim 39, wherein step (a) is conducted by sputtering.

**Claim 43. (Previously presented)** The method according to Claim 41, wherein the ion beam-assisted evaporative deposition is conducted in the presence of an inert gas.

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**Claim 44. (Previously presented)** The method according to Claim 43, wherein the inert gas is selected from the group consisting of argon, xenon, nitrogen and neon.

**Claim 45. (Previously presented)** The method according to Claim 39, wherein the deposition rate is no less than about 20 nm/sec.

**Claim 46. (Previously presented)** The method according to Claim 39, wherein during the deposition of the stent-forming metal, the substrate is rotated.

**Claim 47. (Currently Amended)** A method of manufacturing an endoluminal stent capable of radially expanding from a first diameter to a second diameter, and having a plurality of first structural elements defining a longitudinal axis of the stent and a plurality of second structural elements interconnecting adjacent pairs of first structural elements and defining a circumferential axis of the stent, comprising the steps of:

- a. vacuum depositing nickel and titanium onto an exterior surface of a generally cylindrical substrate to form a generally tubular, [substantially homogeneous] film of nickel-titanium having no less than about 51.5 atomic percent nickel, the vacuum deposition occurring under process conditions that control at least one of grain size and formation of inter- and intra-granular precipitates in the bulk material of the nickel-titanium film; and
- b. removing the endoluminal stent from the generally cylindrical substrate.

**Claim 48. (Previously presented)** The method according to Claim 47, wherein the generally tubular film of nickel-titanium has a composition of between about 51.5 and about 55.0 atomic percent nickel.

**Claim 49. (Previously presented)** The method according to Claim 47, wherein during the deposition of the nickel and titanium, the substrate is rotated.

**Claim 50. (Previously presented)** The method according to Claim 47, wherein a source of the nickel and the titanium to be deposited is a nickel-titanium alloy.

**Claim 51. (Previously presented)** The method according to Claim 47, wherein a source of the nickel and the titanium to be deposited is a binary nickel-titanium alloy.

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**Claim 52.** (Previously presented) The method according to Claim 47, further comprising, prior to step (a), a step of imparting a pattern defining the first and second structural elements onto the exterior surface of the substrate, and wherein the pattern is transferred to the tubular film of nickel-titanium during step (a).

**Claim 53.** (Previously presented) The method according to Claim 47, further comprising a step of imparting a pattern defining the first and second structural elements onto the tubular film of nickel-titanium after step (a).

**Claim 54-66:** Please cancel Claims 54-66 without prejudice to Applicant's right to file continuing applications.